

SEQUENCE LISTING

<110> Luche, Ralf M.
Wei, Bo

<120> DSP-12 AND DSP-13 DUAL-SPECIFICITY
PHOSPHATASES

<130> 200125.420

<140> US

<141> 2001-02-01

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<170> FastSEQ for Windows Version 4.0

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<211> 1949

<212> DNA

<213> Homo sapiens

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<212> PRT
<213> Homo sapien

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35 40 45	
Cys Glu Val Ala Arg Arg His Asn Tyr Phe Pro Gly Gly Val Ala Leu	
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Ile Trp Ala Thr Tyr Tyr Glu Ser Cys Ile Ser Ser Glu Gln Ser Cys	
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85 90 95	
Ser Pro Ala Leu Phe Val Asp Lys Pro Thr Glu Gly Glu Arg Thr Glu	
100 105 110	
Arg Leu Ile Lys Ala Lys Leu Arg Ser Ile Met Met Ser Gln Asp Leu	
115 120 125	
Glu Asn Val Thr Ser Lys Glu Ile Arg Asn Glu Leu Glu Lys Gln Met	
130 135 140	
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145 150 155 160	
Leu Ile Leu Gly Gln Met Asp Lys Pro Ser Leu Ile Phe Asp His Leu	
165 170 175	
Tyr Leu Gly Ser Glu Trp Asn Ala Ser Asn Leu Glu Glu Leu Gln Gly	
180 185 190	
Ser Gly Val Asp Tyr Ile Leu Asn Val Thr Arg Glu Ile Asp Asn Phe	
195 200 205	
Phe Pro Gly Leu Phe Ala Tyr His Asn Ile Arg Val Tyr Asp Glu Glu	
210 215 220	
Thr Thr Asp Leu Leu Ala His Trp Asn Glu Ala Tyr His Phe Ile Asn	
225 230 235 240	
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245 250 255	
Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys Glu Phe	
260 265 270	
Gly Trp Pro Leu Glu Lys Ala Tyr Asn Tyr Val Lys Gln Lys Arg Ser	
275 280 285	
Ile Thr Arg Pro Asn Ala Gly Phe Met Arg Gln Leu Ser Glu Tyr Glu	
290 295 300	
Gly Ile Leu Asp Ala Ser Lys Gln Arg His Asn Lys Leu Trp Arg Gln	
305 310 315 320	
Gln Thr Asp Ser Ser Leu Gln Gln Pro Val Asp Asp Pro Ala Gly Pro	
325 330 335	
Gly Asp Phe Leu Pro Glu Thr Pro Asp Gly Thr Pro Glu Ser Gln Leu	
340 345 350	

Pro Phe Leu Asp Asp Ala Ala Gln Pro Gly Leu Gly Pro Pro Leu Pro
 355 360 365
 Cys Cys Phe Arg Arg Leu Ser Asp Pro Leu Leu Pro Ser Pro Glu Asp
 370 375 380
 Glu Thr Gly Ser Leu Val His Leu Glu Asp Pro Glu Arg Glu Ala Leu
 385 390 395 400
 Leu Glu Glu Ala Ala Pro Pro Ala Glu Val His Arg Pro Ala Arg Gln
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 Asn Ser Lys Arg Ser Cys Pro Asn Gly Met Glu Val Gly Arg Ala Arg
 485 490 495
 Pro Ala Gly Trp His Thr Pro Ser Leu Pro Ser His Ser Asn Trp Pro
 500 505 510
 Thr Ser Ala Ser Val Val Gly Thr Thr Gly Thr Arg His His Thr Gln
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<210> 3

<211> 21

<212> PRT

<213> Homo sapien

<400> 3

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<210> 4

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> Derived from the alignment of nine particular
 human DSPs having MAP-kinase phosphatase activity

<400> 4

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 Thr Asn Ile Leu Ala Tyr Leu Met
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<210> 5

<211> 1711
<212> DNA
<213> Homo sapiens

<400> 5

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caccaagaat	cagccacaga	cggaacaagc	atgcaggcga	tctccaacag	catctccaag	360
caatgttcat	tttactccgc	ccagaagaca	acatcaggtt	ggctgttaaga	ctggaaaagta	420
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<210> 6
<211> 509
<212> PRT
<213> Homo sapiens

<400> 6

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Ala	Val	Ile	Ser	Gln	Asn	Ala	Ile	Asn	Gln	Leu	Ile	Ser	Glu	Ser	Phe
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Leu	Thr	Val	Lys	Gly	Ala	Ala	Leu	Phe	Leu	Pro	Arg	Gly	Asn	Gly	Ser
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Ser	Thr	Pro	Arg	Ile	Ser	His	Arg	Arg	Asn	Lys	His	Ala	Gly	Asp	Leu
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Gln	Gln	His	Leu	Gln	Ala	Met	Phe	Ile	Leu	Leu	Arg	Pro	Glu	Asp	Asn
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115	120	125
Ile Val Leu Gly Met Asp Phe Ser Ser Asn Asp Ser	Ser Thr Cys Thr	
130	135	140
Met Gly Leu Val Leu Pro Leu Trp Ser Asp Thr Leu Ile His	Leu Asp	
145	150	155
Gly Asp Gly Gly Phe Ser Val Ser Thr Asp Asn Arg Val His	Ile Phe	
165	170	175
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180	185	190
Lys Ala Cys Glu Val Ala Arg Ala His Asn Tyr Tyr	Pro Gly Ser Leu	
195	200	205
Phe Leu Thr Trp Val Ser Tyr Tyr Glu Ser His Ile Asn Ser Asp	Gln	
210	215	220
Ser Ser Val Asn Glu Trp Asn Ala Met Gln Asp Val Gln Ser	His Arg	
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Pro Asp Ser Pro Ala Leu Phe Thr Asp Ile Pro Thr Glu Arg	Glu Arg	
245	250	255
Thr Glu Arg Leu Ile Lys Thr Lys Leu Arg Glu Ile Met Met	Gln Lys	
260	265	270
Asp Leu Glu Asn Ile Thr Ser Lys Glu Ile Arg Thr Glu Leu Glu	Met	
275	280	285
Gln Met Val Cys Asn Leu Arg Glu Phe Lys Glu Phe Ile Asp Asn	Glu	
290	295	300
Met Ile Val Ile Leu Gly Gln Met Asp Ser Pro Thr Gln Ile Phe	Glu	
305	310	315
His Val Phe Leu Gly Ser Glu Trp Asn Ala Ser Asn Leu Glu Asp	Leu	
325	330	335
Gln Asn Arg Gly Val Arg Tyr Ile Leu Asn Val Thr Arg Glu Ile Asp		
340	345	350
Asn Phe Phe Pro Gly Val Phe Glu Tyr His Asn Ile Arg Val Tyr Asp		
355	360	365
Glu Glu Ala Thr Asp Leu Leu Ala Tyr Trp Asn Asp Thr Tyr Lys	Phe	
370	375	380
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385	390	395
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405	410	415
Glu Tyr Gly Trp Asn Leu Asp Arg Ala Tyr Asp Tyr Val Lys	Glu Arg	
420	425	430
Arg Thr Val Thr Lys Pro Asn Pro Ser Phe Met Arg Gln Leu Glu	Glu	
435	440	445
Tyr Gln Gly Ile Leu Leu Ala Ser Phe Leu Gly Leu Ile His Gly	Gly	
450	455	460
Arg Asp Lys Pro Trp Gly Glu Lys Ser Thr Glu Phe Glu Ser Val	Asp	
465	470	475
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<210> 7

<211> 1052

<212> DNA

<213> Homo sapiens

<400> 7

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<211> 241

<212> PRT

<213> Homo sapiens

<400> 8

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Ile	Asp	Asn	Glu	Met	Ile	Val	Ile	Leu	Gly	Gln	Met	Asp	Ser	Pro	Thr
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Gln	Ile	Phe	Glu	His	Val	Phe	Leu	Gly	Ser	Glu	Trp	Asn	Ala	Ser	Asn
	50					55				60					
Leu	Glu	Asp	Leu	Gln	Asn	Arg	Gly	Val	Arg	Tyr	Ile	Leu	Asn	Val	Thr
	65					70				75			80		
Arg	Glu	Ile	Asp	Asn	Phe	Phe	Pro	Gly	Val	Phe	Glu	Tyr	His	Asn	Ile
		85					90				95				
Arg	Val	Tyr	Asp	Glu	Glu	Ala	Thr	Asp	Leu	Leu	Ala	Tyr	Trp	Asn	Asp
	100					105				110					
Thr	Tyr	Lys	Phe	Ile	Ser	Lys	Ala	Lys	Lys	His	Gly	Ser	Lys	Cys	Leu
	115					120				125					
Val	His	Cys	Lys	Met	Gly	Val	Ser	Arg	Ser	Ala	Ser	Thr	Val	Ile	Ala
	130					135				140					
Tyr	Ala	Met	Lys	Glu	Tyr	Gly	Trp	Asn	Leu	Asp	Arg	Ala	Tyr	Asp	Tyr
	145					150				155			160		
Val	Lys	Glu	Arg	Arg	Thr	Val	Thr	Lys	Pro	Asn	Pro	Ser	Phe	Met	Arg
		165					170				175				
Gln	Leu	Glu	Glu	Tyr	Gln	Gly	Ile	Leu	Leu	Ala	Ser	Phe	Leu	Gly	Leu
	180					185				190					
Ile	His	Gly	Gly	Arg	Asp	Lys	Pro	Trp	Gly	Glu	Lys	Ser	Thr	Glu	Phe

195	200	205
Glu Ser Val Asp Leu Val Ser Ile Pro Gly Ser Pro Ser Cys Cys Asn		
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Lys		240

<210> 9
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<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 9
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26

<210> 11
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<212> DNA
<213> Artificial Sequence

<220>
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<400> 11
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<223> Primer

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<210> 23
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<212> PRT
<213> Homo sapiens

<400> 23

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																10
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Pro	Leu	Ser	Asn	Ser	Gln	Pro	Ser	Phe	Pro	Val	Glu	Ile	Leu	Pro	Phe	
20																30
Leu	Tyr	Leu	Gly	Cys	Ala	Lys	Asp	Ser	Thr	Asn	Leu	Asp	Val	Leu	Glu	
35																45
40																
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Glu	Phe	Gly	Ile	Lys	Tyr	Ile	Leu	Asn	Val	Thr	Pro	Asn	Leu	Pro	Asn	
50																50
55																60
Leu	Phe	Glu	Asn	Ala	Gly	Glu	Phe	Lys	Tyr	Lys	Gln	Ile	Pro	Ile	Ser	
65																80
70																
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Asp	His	Trp	Ser	Gln	Asn	Leu	Ser	Gln	Phe	Phe	Pro	Glu	Ala	Ile	Ser	
85																95
85																
90																
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Phe	Ile	Asp	Glu	Ala	Arg	Gly	Lys	Asn	Cys	Gly	Val	Leu	Val	His	Cys	
100																110
105																
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Leu	Ala	Gly	Ile	Ser	Arg	Ser	Val	Thr	Val	Thr	Val	Ala	Tyr	Leu	Met	
115																125
120																
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Gln	Lys	Leu	Asn	Leu	Ser	Met	Asn	Asp	Ala	Tyr	Asp	Ile	Val	Lys	Met	
130																140
135																
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Lys	Lys	Ser	Asn	Ile	Ser	Pro	Asn	Phe	Asn	Phe	Met	Gly	Gln	Leu	Leu	
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150																
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165																
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<210> 24

<211> 168

<212> PRT

<213> Homo sapiens

<400> 24

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5																
																10
																15
Pro	Ser	Ser	Gln	Pro	Ala	Phe	Pro	Val	Gln	Ile	Leu	Pro	Tyr	Leu	Tyr	
20																30
25																
																30
Leu	Gly	Cys	Ala	Lys	Asp	Ser	Thr	Asn	Leu	Asp	Val	Leu	Gly	Lys	Tyr	
35																45
40																
																45
Gly	Ile	Lys	Tyr	Ile	Leu	Asn	Val	Thr	Pro	Asn	Leu	Pro	Asn	Ala	Phe	
50																60
55																
																60
Glu	His	Gly	Gly	Glu	Phe	Thr	Tyr	Lys	Gln	Ile	Pro	Ile	Ser	Asp	His	
65																80
70																
																80
Trp	Ser	Gln	Asn	Leu	Ser	Gln	Phe	Phe	Pro	Glu	Ala	Ile	Ser	Phe	Ile	
85																95
85																
90																
																95
Asp	Glu	Ala	Arg	Ser	Lys	Lys	Cys	Gly	Val	Leu	Val	His	Cys	Leu	Ala	
100																110
105																
																110
Gly	Ile	Ser	Arg	Ser	Val	Thr	Val	Thr	Val	Ala	Tyr	Leu	Met	Gln	Lys	
115																125
120																
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Met	Asn	Leu	Ser	Leu	Asn	Asp	Ala	Tyr	Asp	Phe	Val	Lys	Arg	Lys	Lys	
130																140
135																
																140
Ser	Asn	Ile	Ser	Pro	Asn	Phe	Asn	Phe	Met	Gly	Gln	Leu	Leu	Asp	Phe	

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Glu Arg Thr Leu Gly Leu Ser Ser			
	165		

<210> 25

<211> 157

<212> PRT

<213> Homo sapiens

<400> 25

Gly Ala Thr Pro Pro Val Gly Leu Arg Ala Ser Phe Pro Val Gln			
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Ile Leu Pro Asn Leu Tyr Leu Gly Ser Ala Arg Asp Ser Ala Asn Leu			
20	25	30	
Glu Ser Leu Ala Lys Leu Gly Ile Arg Tyr Ile Leu Asn Val Thr Pro			
35	40	45	
Asn Leu Pro Asn Phe Phe Glu Lys Asn Gly Asp Phe His Tyr Lys Gln			
50	55	60	
Ile Pro Ile Ser Asp His Trp Ser Gln Asn Leu Ser Arg Phe Phe Pro			
65	70	75	80
Glu Ala Ile Glu Phe Ile Asp Glu Ala Leu Ser Gln Asn Cys Gly Val			
85	90	95	
Leu Val His Cys Leu Ala Gly Val Ser Arg Ser Val Thr Val Thr Val			
100	105	110	
Ala Tyr Leu Met Gln Lys Leu His Leu Ser Leu Asn Asp Ala Tyr Asp			
115	120	125	
Leu Val Lys Arg Lys Lys Ser Asn Ile Ser Pro Asn Phe Asn Phe Met			
130	135	140	
Gly Gln Leu Leu Asp Phe Glu Arg Ser Leu Arg Leu Glu			
145	150	155	

<210> 26

<211> 170

<212> PRT

<213> Homo sapiens

<400> 26

Gly Leu Cys Glu Gly Lys Pro Ala Ala Leu Leu Pro Met Ser Leu Ser			
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Gln Pro Cys Leu Pro Val Pro Ser Val Gly Leu Thr Arg Ile Leu Pro			
20	25	30	
His Leu Tyr Leu Gly Ser Gln Lys Asp Val Leu Asn Lys Asp Leu Met			
35	40	45	
Thr Gln Asn Gly Ile Ser Tyr Val Leu Asn Ala Ser Asn Ser Cys Pro			
50	55	60	
Lys Pro Asp Phe Ile Cys Glu Ser Arg Phe Met Arg Val Pro Ile Asn			
65	70	75	80
Asp Asn Tyr Cys Glu Lys Leu Leu Pro Trp Leu Asp Lys Ser Ile Glu			
85	90	95	
Phe Ile Asp Lys Ala Lys Leu Ser Ser Cys Gln Val Ile Val His Cys			
100	105	110	
Leu Ala Gly Ile Ser Arg Ser Ala Thr Ile Ala Ile Ala Tyr Ile Met			
115	120	125	
Lys Thr Met Gly Met Ser Ser Asp Asp Ala Tyr Arg Phe Val Lys Asp			

130	135	140
Arg Arg Pro Ser Ile Ser Pro Asn Phe Asn Phe Leu Gly Gln Leu Leu		
145	150	155
Glu Tyr Glu Arg Thr Leu Lys Leu Leu Ala		
	165	170

<210> 27
<211> 168
<212> PRT
<213> Homo sapiens

<400> 27		
Pro Ala Gln Ala Leu Pro Pro Ala Gly Ala Glu Asn Ser Asn Ser Asp		
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Pro Arg Val Pro Ile Tyr Asp Gln Gly Gly Pro Val Glu Ile Leu Pro		
20	25	30
Tyr Leu Tyr Leu Gly Ser Cys Asn His Ser Ser Asp Leu Gln Gly Leu		
35	40	45
Gln Ala Cys Gly Ile Thr Ala Val Leu Asn Val Ser Ala Ser Cys Pro		
50	55	60
Asn His Phe Glu Gly Leu Phe His Tyr Lys Ser Ile Pro Val Glu Asp		
65	70	75
Asn Gln Met Val Glu Ile Ser Ala Trp Phe Gln Glu Ala Ile Ser Phe		
85	90	95
Ile Asp Ser Val Lys Asn Ser Gly Gly Arg Val Leu Val His Cys Gln		
100	105	110
Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Ile Gln		
115	120	125
Ser His Arg Val Arg Leu Asp Glu Ala Phe Asp Phe Val Lys Gln Arg		
130	135	140
Arg Gly Val Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln		
145	150	155
Leu Glu Thr Gln Val Leu Cys His		
	165	

<210> 28
<211> 169
<212> PRT
<213> Homo sapiens

<400> 28		
Pro Leu Ser Thr Ser Val Pro Asp Ser Ala Glu Ser Gly Cys Ser Ser		
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Cys Ser Thr Pro Leu Tyr Asp Gln Gly Gly Pro Val Glu Ile Leu Pro		
20	25	30
Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ser Arg Lys Asp Met Leu		
35	40	45
Asp Ala Leu Gly Ile Thr Ala Leu Ile Asn Val Ser Ala Asn Cys Pro		
50	55	60
Asn His Phe Glu Gly His Tyr Gln Tyr Lys Ser Ile Pro Val Glu Asp		
65	70	75
Asn His Lys Ala Asp Ile Ser Ser Trp Phe Asn Glu Ala Ile Asp Phe		
85	90	95
Ile Asp Ser Ile Lys Asn Ala Gly Arg Val Phe Val His Cys Gln		

100	105	110
Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Met Arg		
115	120	125
Thr Asn Arg Val Lys Leu Asp Glu Ala Phe Glu Phe Val Lys Gln Arg		
130	135	140
Arg Ser Ile Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln		
145	150	155
Phe Glu Ser Gln Val Leu Ala Pro His		
165		

<210> 29

<211> 169

<212> PRT

<213> Homo sapiens

<400> 29

Pro Val Pro Pro Ser Ala Thr Glu Pro Leu Asp Leu Gly Cys Ser Ser		
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Cys Gly Thr Pro Leu His Asp Gln Gly Gly Pro Val Glu Ile Leu Pro		
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Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ala Arg Arg Asp Met Leu		
35	40	45
Asp Ala Leu Gly Ile Thr Ala Leu Leu Asn Val Ser Ser Asp Cys Pro		
50	55	60
Asn His Phe Glu Gly His Tyr Gln Tyr Lys Cys Ile Pro Val Glu Asp		
65	70	75
Asn His Lys Ala Asp Ile Ser Ser Trp Phe Met Glu Ala Ile Glu Tyr		
85	90	95
Ile Asp Ala Val Lys Asp Cys Arg Gly Arg Val Leu Val His Cys Gln		
100	105	110
Ala Gly Ile Ser Arg Ser Ala Thr Ile Cys Leu Ala Tyr Leu Met Met		
115	120	125
Lys Lys Arg Val Arg Leu Glu Glu Ala Phe Glu Phe Val Lys Gln Arg		
130	135	140
Arg Ser Ile Ile Ser Pro Asn Phe Ser Phe Met Gly Gln Leu Leu Gln		
145	150	155
Phe Glu Ser Gln Val Leu Ala Thr Ser		
165		

<210> 30

<211> 171

<212> PRT

<213> Homo sapiens

<400> 30

Ser Glu Arg Ala Leu Ile Ser Gln Cys Gly Lys Pro Val Val Asn Val		
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Ser Tyr Arg Pro Ala Tyr Asp Gln Gly Gly Pro Val Glu Ile Leu Pro		
20	25	30
Phe Leu Tyr Leu Gly Ser Ala Tyr His Ala Ser Lys Cys Glu Phe Leu		
35	40	45
Ala Asn Leu His Ile Thr Ala Leu Leu Asn Val Ser Arg Arg Thr Ser		
50	55	60
Glu Ala Cys Met Thr His Leu His Trp Ile Pro Val Glu Asp		

65	70	75	80
Ser His Thr Ala Asp Ile Ser Ser His Phe Gln Glu Ala Ile Asp Phe			
85	90	95	
Ile Asp Cys Val Arg Glu Lys Gly Gly Lys Val Leu Val His Cys Glu			
100	105	110	
Ala Gly Ile Ser Arg Ser Pro Thr Ile Cys Met Ala Tyr Leu Met Lys			
115	120	125	
Thr Lys Gln Phe Arg Leu Lys Glu Ala Phe Asp Tyr Ile Lys Gln Arg			
130	135	140	
Arg Ser Met Val Ser Pro Asn Phe Gly Phe Met Gly Gln Leu Leu Gln			
145	150	155	160
Tyr Glu Ser Glu Ile Leu Pro Ser Thr Pro Asn			
165	170		

<210> 31
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<212> PRT
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<400> 31			
Gln Met Asn Cys Asn Leu Lys Glu Leu Lys Glu Phe Ile Asp Asn Glu			
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Met Leu Leu Ile Leu Gly Gln Met Asp Lys Pro Ser Leu Ile Phe Asp			
20	25	30	
His Leu Tyr Leu Gly Ser Glu Trp Asn Ala Ser Asn Leu Glu Glu Leu			
35	40	45	
Gln Gly Ser Gly Val Asp Tyr Ile Leu Asn Val Thr Arg Glu Ile Asp			
50	55	60	
Asn Phe Phe Pro Gly Leu Phe Ala Tyr His Asn Ile Arg Val Tyr Asp			
65	70	75	80
Glu Glu Thr Thr Asp Leu Leu Ala His Trp Asn Glu Ala Tyr His Phe			
85	90	95	
Ile Asn Lys Ala Lys Arg Asn His Ser Lys Cys Leu Val His Cys Lys			
100	105	110	
Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys			
115	120	125	
Glu Phe Gly Trp Pro Leu Glu Lys Ala Tyr Asn Tyr Val Lys Gln Lys			
130	135	140	
Arg Ser Ile Thr Arg Pro Asn Ala Gly Phe Met Arg Gln Leu Ser Glu			
145	150	155	160
Tyr Glu Gly Ile Leu Asp Ala Ser Lys Gln			
165	170		

<210> 32
<211> 170
<212> PRT
<213> Homo sapiens

<400> 32			
Gln Met Val Cys Asn Leu Arg Glu Phe Lys Glu Phe Ile Asp Asn Glu			
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Met Ile Val Ile Leu Gly Gln Met Asp Ser Pro Thr Gln Ile Phe Glu			
20	25	30	
His Val Phe Leu Gly Ser Glu Trp Asn Ala Ser Asn Leu Glu Asp Leu			

35	40	45
Gln Asn Arg Gly Val Arg Tyr Ile Leu Asn Val Thr Arg Glu Ile Asp		
50	55	60
Asn Phe Phe Pro Gly Val Phe Glu Tyr His Asn Ile Arg Val Tyr Asp		
65	70	75
Glu Glu Ala Thr Asp Leu Leu Ala Tyr Trp Asn Asp Thr Tyr Lys Phe		
85	90	95
Ile Ser Lys Ala Lys Lys His Gly Ser Lys Cys Leu Val His Cys Lys		
100	105	110
Met Gly Val Ser Arg Ser Ala Ser Thr Val Ile Ala Tyr Ala Met Lys		
115	120	125
Glu Tyr Gly Trp Asn Leu Asp Arg Ala Tyr Asp Tyr Val Lys Glu Arg		
130	135	140
Arg Thr Val Thr Lys Pro Asn Pro Ser Phe Met Arg Gln Leu Glu Glu		
145	150	155
Tyr Gln Gly Ile Leu Leu Ala Ser Phe Leu		
165	170	

<210> 33
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<212> PRT
<213> Homo sapiens

<400> 33		
Ser Gly Ser Phe Glu Leu Ser Val Gln Asp Leu Asn Asp Leu Leu Ser		
1	5	10
Asp Gly Ser Gly Cys Tyr Ser Leu Pro Ser Gln Pro Cys Asn Glu Val		
20	25	30
Thr Pro Arg Ile Tyr Val Gly Asn Ala Ser Val Ala Gln Asp Ile Pro		
35	40	45
Lys Leu Gln Lys Leu Gly Ile Thr His Val Leu Asn Ala Ala Glu Gly		
50	55	60
Arg Ser Phe Met His Val Asn Thr Asn Ala Asn Phe Tyr Lys Asp Ser		
65	70	75
Gly Ile Thr Tyr Leu Gly Ile Lys Ala Asn Asp Thr Gln Glu Phe Asn		
85	90	95
Leu Ser Ala Tyr Phe Glu Arg Ala Ala Asp Phe Ile Asp Gln Ala Leu		
100	105	110
Ala Gln Lys Asn Gly Arg Val Leu Val His Cys Arg Glu Gly Tyr Ser		
115	120	125
Arg Ser Pro Thr Leu Val Ile Ala Tyr Leu Met Met Arg Gln Lys Met		
130	135	140
Asp Val Lys Ser Ala Leu Ser Ile Val Arg Gln Asn Arg Glu Ile Gly		
145	150	155
Pro Asn Asp Gly Phe Leu Ala Gln Leu Cys Gln Leu Asn Asp Arg Leu		
165	170	175
Ala Lys Glu Gly		
180		

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**UTILITY
PATENT APPLICATION
TRANSMITTAL**
(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	200125.420
First Inventor	Ralf M. Luche
Title	DSP-12 AND DSP-13 DUAL-SPECIFICITY PHOSPHATASES
Express Mail Label No.	EL773171053US

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2. <input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.	8. <input checked="" type="checkbox"/> Nucleotide and/or Amino Acid Sequence Submission <i>(if applicable, all necessary)</i>		
3. <input checked="" type="checkbox"/> Specification [Total Pages 56] <i>(preferred arrangement set forth below)</i>	a. <input checked="" type="checkbox"/> Computer Readable Form (CRF) b. <input checked="" type="checkbox"/> Specification Sequence Listing on: i. <input type="checkbox"/> CD-ROM or CD-R (2 copies); or ii. <input checked="" type="checkbox"/> paper c. <input checked="" type="checkbox"/> Statements verifying identity of above copies		
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5. Oath or Declaration [Total Sheets _____]	Assignment Papers (cover sheet & document(s))		
a. <input type="checkbox"/> Newly executed (original or copy)	10. <input type="checkbox"/> 37 CFR 3.73(b) Statement <input type="checkbox"/> Power of (when there is an assignee) Attorney		
b. <input type="checkbox"/> Copy from a prior application (37 CFR 1.63 (d)) <i>(for a continuation/divisional with Box 18 completed)</i>	11. <input type="checkbox"/> English Translation Document <i>(if applicable)</i>		
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